

Listing of Claims:

1. (Currently amended) Method of manufacturing a window transparent for electrons of an electron beam (E), ~~in particular of in~~ an X-ray source, comprising the steps of: ~~providing on a surface (11) of a carrier element (1) to which a window foil (2) shall be a fixed a receiving area (13, 16) for receiving a soldering material (3) used for fixing said window foil (2) to said carrier element (1), said carrier element (1) comprising a through hole (12) for the transmission of said electrons (E), covering said surface (11) having said receiving area (12) with a soldering material (3) such that substantially only said receiving area (13, 16) is filled with soldering material (3), placing said window foil (2) on top of said surface (11) and heating said soldering material (3) for fixing said window foil (2) to said surface (11)~~ providing a carrier element with a surface and an opening therethrough;

forming one or more grooves in the surface;

filling the grooves with a soldering material;

positioning a window foil along the surface and covering the opening;

providing heat to the soldering material so that portions of the soldering material flow out of the grooves and between the carrier element and window foil due to capillary action; and

allowing the soldering material to cool to connect the window foil to the carrier element, wherein the opening is substantially free of the soldering material.

2. (Currently amended) Method as claimed in claim 1, further comprising wherein in said step of covering said surface (11) with said soldering material (3) removing excessive soldering material from the surface is removed so that essentially only said receiving area (13, 16) is filled with soldering material (3) prior to the positioning of the window foil thereon.

3. (Currently amended) Method as claimed in claim 1, wherein ~~said receiving area comprises the one or more grooves (13)~~ are a plurality of grooves concentrically aligned with the opening around said through hole (12) in said carrier element (1).

4. (Currently amended) Method as claimed in claim 3, wherein said plurality of grooves (13)~~each~~ have a semi-circular cross-section.
5. (Currently amended) Method as claimed in claim 3, wherein at least one of said plurality of grooves (13) has a larger cross-section than another of said plurality of grooves~~are concentric around said through hole (12)~~.
6. (Currently amended) Method as claimed in claim 1, wherein said surface receiving area is formed~~made~~ by ablating said surface of said carrier element so as to obtain a carrier element (1) having an inclined surface (16) with a height decreasing from the opening to an edge of the carrier element~~said through hole (12) to its edge~~.
7. (Currently amended) Method as claimed in claim 1, wherein an~~the~~ edge (13) of the surface (1) of said carrier element (1) along the opening~~facing said through hole (12)~~ is rounded.
8. (Currently amended) Method as claimed in claim 1, wherein the surface~~said receiving area comprises~~ has an annular channel in proximity to the opening (15)~~closely surrounding said through hole (12)~~ for preventing the soldering material from~~(3) to flowing into the opening~~~~said through hole (12)~~.
9. (Currently amended) Method as claimed in claim 1, wherein said carrier element (1) comprises a top carrier element (101) and a bottom carrier element (102), the surface said receiving area (13, 16) being provided in said top carrier element (101) and said window foil (2) being fixed to said top carrier element (101) before said top carrier element (101) being~~is~~ soldered to said bottom carrier element (102).
10. (Currently amended) Window for the transmission of electrons of an electron beam (E), in particular of an X-ray source, the window comprising:

a carrier element (1) ~~for carrying a window foil (2), said carrier element (1) comprising a through hole (12)~~ having a surface and an opening for the transmission of said electrons therethrough; (E);

a window foil (2) ~~soldered~~ connected on the surface (11) of said carrier element (1) by soldering material, wherein said surface (11) of said ~~carrier element (1)~~ is provided with a ~~receiving area (13, 16) filled with a soldering material (3) used for a fixing said window foil (2) to said carrier element (1)~~ is inclined with a decreasing height towards an edge of the carrier element opposite to the opening, and wherein the opening is substantially free of the soldering material.

11. (Currently amended) X-ray source having comprising:

an electron source (42) ~~for emitting an electron beam (E);~~

a target (44) ~~for emitting X-rays upon incidence of said electron beam;~~ (E) and

a window (41) ~~as claimed in claim 10, said window (41) being located~~ positioned between said electron source (42) and said target (44).

wherein the window has a carrier element having a surface and an opening for the transmission of said electrons therethrough,

wherein the window has a window foil connected on the surface of the carrier element by soldering material,

wherein the surface has at least one groove formed therein surrounding the opening and having a portion of the soldering material therein, and

wherein the opening is substantially free of the soldering material.

12. (Currently amended) X-ray source as claimed in claim 11, wherein said target (44) is a liquid metal target and wherein said window (41) separates the liquid metal of said liquid metal target (44) from a vacuum area (40) comprising said electron source (42).

13. (New) The X-ray source of claim 11, wherein the surface has a channel formed therein surrounding the opening, wherein the channel has a cross-section larger than a

cross-section of the at least one groove, and wherein a portion of the soldering material is in the channel.

14. (New) The X-ray source of claim 11, wherein the surface is inclined with a decreasing height towards an edge of the carrier element opposite to the opening.

15. (New) The X-ray source of claim 11, wherein an edge of the surface along the opening is rounded.

16. (New) The X-ray source of claim 11, wherein the at least one groove is a plurality of concentric grooves.

17. (New) The X-ray source of claim 16, wherein at least one of said plurality of concentric grooves has a larger cross-section than another of said plurality of concentric grooves.

18. (New) The window of claim 10, wherein the surface has at least one groove formed therein surrounding the opening and having a portion of the soldering material therein.

19. (New) The window of claim 18, wherein the at least one groove has a semi-circular cross-section.

20. (New) The window of claim 10, wherein an edge of the surface along the opening is rounded.